

## Anomalous Transport Characteristics of High Temperature Superconductors and Josephson Currents

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Abstract: The transport characteristics of high temperature superconductor current and Josephson current is investigated in the framework of the modified time-dependent Ginzburg-Landau model and the Lawrence-Doniach model. We evaluated the vortex equation and found that the signs of the high temperature superconductor current and the Josephson current can reverse. Some explicit expressions for different cases are derived, which accord with experimental data.

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Key words: superconductivity, junction, Josephson current

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